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ABSTRACT

This report describes a project at Northwestern University (supported by a grant from the United States Office of Education Right to Read effort) to extend certain developments of the preservice teacher education program, known as the Tutorial and Clinical program in teacher education. In this program, the prospective teacher's entry into the reading education curriculum is effected with a computer-administered assessment device which gathers information about the student's past experiences to determine the student's needs for further information about reading, reading instruction, and reading-related disciplines. Another part of the assessment device consists of competency based questions about the various fields of information, knowledge of which is strongly recommended for skilled reading teaching. This information is used to generate a program of instruction for the student through the use of competency based units. The thrust of the project is to more efficiently utilize faculty talents and student time in the preparation of competent reading teachers. Continued assessment of the system is planned to facilitate modification as indicated by graduates of the system. (WR)

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A PROJECT TO DEVELOP THE TECHNOLOGY OF COMPETENCY-BASED READING INSTRUCTION

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The School of Education at Northwestern University has a long history of innovative programs in teacher preparation. In the area of preservice teacher education, this school developed the exemplary Tutorial and Clinical (T and C) program in the 1960's, which drew national attention for its early and continued use of cooperative teacher training activities in participating schools and the use of adjunct faculty drawn from a number of pre-college settings. The T and C program has a highly-developed set of contractually defined experiences for students from freshman through senior years. Under this arrangement a student, working with his classroom teacher and faculty advisor, identifies experiences which are likely to fill his needs for preparation as a teacher of reading or other subject areas. This list of experiences becomes a written contract and record of the student's negotiations as well as a document against which his progress and success is measured as each level and area of preparation is completed. Thus, students have a considerable input and sense of responsibility developed for their own professional education and, at the same time, they have available informed support from the school and interested faculty to assist them in their progress toward their stated goals.

Since contracts represent a record of continuous evaluation both of individual students and of the program, The Northwestern School of Education has carried on a monitoring and modification of the T and C program since its inception almost ten years ago. In the area of reading and the preparation of reading teachers, this feedback has prompted a steady growth in the kind

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and amount of specific training in reading available within the program. At present, all elementary-level students devote at least one full quarter of their preparatory work in the sophomore year to the teaching of reading. This is followed for most students by a second quarter of work in the form of a formal course in reading during the junior or senior year.

Evaluations of current students and graduates of the T and C program have indicated their universal concern and need for more extended and specific instruction in the teaching of reading. Surveys of schools where Northwestern T and C students, MAT students and graduates currently work show that, while these teachers have better than average preparation in reading, they and their supervisors feel that a higher level of expertise in teaching reading is their first professional priority. In addition, approximately eighty per cent of respondents in a recent survey of contract evaluations show that both students and their supervising teachers feel the need for more specific preparation in reading.

It is questionable, however, whether simply increasing the total time spent on how to teach reading is a necessary or justifiable solution to the problem. A close examination of supervision reports, contract terms and evaluations, and responses of former Northwestern students shows a wide variety of expressed needs in reading. On one hand there are students saying that they want to know how to identify and treat a specific perceptual problem related to reading with a particular child, and elsewhere there are supervising teachers and Northwestern alumni who say that they wish they had more and better general skills in choosing and administering tests of reading performance.

The response of the reading education staff and faculty at Northwestern has been to move, within the framework of the teacher education contract system, toward a more specifically defined set of competencies against which all

preservice education students in reading are gauged. Thus far the use of a competency framework for reading is carried out in individual conferences when contracts are being discussed and negotiated with the student and his committee of faculty and school personnel. Certain limitations appear, however, in the appropriateness, definition and management of reading competencies for teachers when applied within this program.

The first limitation relates to the number of students and staff commonly involved in the T and C program under the current contract arrangements. Over the past three years there has been a yearly average of one hundred students working on contracts and experiences in the teaching of reading at the sophomore and junior levels. With a staff of three university people (one part-time faculty and two teaching assistants) assigned to the program, it is possible to carry on seminars and individual conferences when the objectives and competencies are stated in global terms. As indicated above, however, this sort of nonspecific experience both on and off campus has not met the apparent needs and wants of this particular group of prospective teachers.

Further specification of the desired competencies has aggravated the need for extended and more particularized conferencing with our student population. As more particularization is included in the contract terms, the process of writing and monitoring those contracts requires more input from Northwestern staff and cooperating classroom teachers. Thus, we are finding that an increasing proportion of student, faculty, supervisor and teacher time is being devoted to the mechanics of writing contracts and scheduling interviews, observations, and demonstrations of the particular competency in question.

The principal limitation of the current contractual arrangements, though, remains the relatively undeveloped and global nature of the learnings that are currently in use. When, in the process of working toward an improved

model of reading education, the competencies are elaborated and specified more fully, their interpretation and adaptation to the contracts of individual students becomes increasingly time-consuming and potentially a diversion from the learning processes. We are faced, therefore, with the competing demands for greater specificity in reading education and administrative limitations which decrease our ability to provide that level of specification.

Preservice teachers at Northwestern University have shown the following needs for modification in the reading components of their programs:

1. to provide for an individualized preservice reading program based on increased specification of learning activities.

2. to expand the interdisciplinary base for the design of instruction and experiences in reading for all students in the preservice teacher programs.

3. to expand opportunities for students to validate their knowledge and skills of reading through many types of directed observations and teaching contracts with children.

4. to evaluate the success or failure of the reading program in relation to the specific goals of individual preservice teachers and their performance as teachers of reading.

Each of these needs gives rise to a number of separate and specific objectives which form the basis for the present proposal. All of the above needs, and many of the objectives related to them, have been drawn from a survey of students' contract evaluations, and the reactions of participants in Northwestern teacher education programs, as solicited through questionnaires, conferences and discussions over the past six months. In combination these needs and objectives have led the staff at Northwestern University to work toward the development of a reading education program which is possible within the institution's constraints in finances and staffing and which will have some potential for use in other teacher training sites.

Approach

The School of Education of Northwestern University is in the process of modifying and reorganizing all of its undergraduate and graduate level reading and language programs. The present report is a description of a project supported by a grant of about $50,000.00 from the U.S.O.E. Right to Read effort to extend certain of those developments as they apply to the preservice teacher education program, known as the Tutorial and Clinical program in teacher education, and applies specifically to restructuring as described here for the reading component of that undergraduate program. Some portions of the program development and their implementation in the T and C program have been underway for a period of some months. The program description is presented to show the context of the activities which are supported under the Right to Read program.

General

The general approach to be followed under this project requires a total of two years from the start of the program development to its eventual validation and presentation in a final report. The project will concern itself with the organization of a statement of competencies for effective teachers of reading, and the expansion of that statement into a set of specific options for preservice teachers in the areas of information, skills and applications of skills in teaching reading. The methodology to be used for organizing the competency model, as well as the procedures for ordering and monitoring the presentation of various optional activities will be designed within a computer-based educational management system for reading and language programs at Northwestern University. The present project focuses on the competency model in reading for preservice teachers, the expansion of that model into options for learning activities both theoretical and applied, and the development of the computer based monitoring system which

will not only make direct presentations of information and optional activities but also provide a continuous monitoring of the progress of individuals and groups of preservice teachers across the range of competencies to be developed in this reading education program.

The general schedule of activities under this project is as follows:

(a) six months for the development of the competency model for reading teachers and the design and pilot testing of a computer-based learning presentation and control network which accomodates to that model.

(b) six months for the elaboration of learning activities as options under the competency model, including specification in considerable degree of the information, skills and applications of reading approaches which give promise of successful development for the preservice reading teacher.

(c) six months of development and trial testing of the prototype competency learning system, including writing materials, organizing information presentations, preparing skill simulation, direct teaching activities in school settings.

(d) a final six month period devoted to the installation and testing of this prototype learning system in reading over a two quarter (two thirds of a school year) period for students in the Northwestern T and C program in preservice education.

DESCRIPTION OF THE PROGRAM

The prospective teacher's entry into the reading education curriculum will be effected with a computer-administered assessment device designed to gather information about the student's past experiences relevant to a determination of what he or she needs in the way of further information about reading, reading instruction, and reading-related disciplines. This part of the assessment device will take the form of questions about student teaching, tutoring, course work in language areas, professional experience, etc. The second part of the assessment device will take the form of competency-based questions about the various fields of information knowledge of which is strongly recommended for skilled reading teaching. Because these areas of information comprise such a

large corpus, this portion of the assessment device will be administered in a tailored testing format, that is, the items will be ranked in terms of difficulty and will be presented on the basis of performance on earlier presented ones. This procedure will insure that the student's competency level can be roughly approximated in a short period of time.

Both the information about past experiences and about performance on the initial assessment device will be used to generate a tentative path for the student through competency based units of instruction. These will take a variety of forms: computer assisted instructional units, video-taped units of presentations given by adjunct faculty from non-education but reading related areas, clinical experiences, tutorials with the instructor, micro-teaching experiences, etc. Performance within these competency based units will modify the path the student takes through the instructional materials, advancing more rapidly if the student seems to be competent in the area and providing remedial sequences if the student evidences difficulty with the material. The student's path and progress will be available for the inspection of the instructor, who could later the path or perhaps provide some extra help.

Part of the control system which keeps records of the students progress will maintain the scheduling of the experiences for the student. Due to the limited resources of video presentations, clinical experiences, group lectures, etc., the arrangement of these competency units becomes critical. Thus, the computer registration system will be responsible for determining which sequence of units the student will undergo and will also schedule those experiences which either cannot be duplicated or which are available only to a limited number of students during a particular period.

DESCRIPTION OF THE COMPETENCE UNITS

Perhaps the best illustration of the instructional unit which will comprise the "teaching" part of the system can be given obliquely through a description of how the units will be devised. The following will describe the first stage of the project, which, it is estimated, will last from 11 to 18 months.

The first stage will involve the identification, elaboration, and justification of a series of competencies whose acquisition is to be encouraged in students so they might become competent teachers of reading. The identification process will proceed in several ways.

Searches through the literature on reading and reading instruction aided by the ERIC-CRIER educational data base will provide illustrations and definitions of many of the requisite competencies for reading instruction generally agreed upon by a variety of authors. Those areas of controversy, either theoretical or practical, will be included on a tentative basis. Their disposition will be discussed later.

With the co-operation of the Chicago Public Schools, a pilot study is currently being undertaken to identify superior teachers of reading. From the results, further identification of teaching competencies at the practical level will be distilled and verified by observers in other school districts.

Adjunct faculty contributing to the project will aid in the identification of competencies desired for reading teachers in the content areas circumscribed by their disciplines. Suggestions by them as to particular practices in reading instruction will also be tentatively entertained. Their disposition will be discussed in the section of the justification of competencies.

The elaboration of the skills will proceed by a variety of paths. Items will be classified according to area. In many instances, this will be the discipline from whose perspective they were spawned. For example, items pertaining to phonological rules would be relegated to areas of linguistics and psycholinguistics, but variations of such rules by speakers of English, while also considered there, would also be included in sections on dialect geography, urban anthropology, or Black English.

Information provided from any one of the sources listed above that can be specified in terms of some behavior, such as identification, recognition, etc., (a requirement for information presented with the computer) will be formatted in such a fashion. Information which cannot be formatted in such a way will be evaluated for inclusion in the instructional materials and considered in terms of an appropriate medium of presentation, such as classroom observation, video-taped lectures, etc.

The justification of the competencies to be included will also proceed by a variety of ways. Skills identified from a variety of perspectives, i.e., from adjunct faculty, searches, observation, etc., will be deemed generally acceptable and will be included in the instructional materials.

Any content or practical item suggested as part of the repetoire of a skilled reading teacher that does not receive general support in the literature or from the various adjunct sources will be tentatively included in the instructional materials with a low priority, that is, those skills which are converged upon by a variety of sources will be developed first.

Items that suggest teacher competencies which are of a controversial nature will be evaluated experimentally prior to inclusion, or at least admitted to the materials with a note as to its univerified validity. For

example, many practitioners of the "phonics" method, for example, aim toward independent word identification as one of the goals for children learning to read. (In fact, that may be the primary justification for this method.) However, if, as some writers believe, reading is a sort of "linguistic guessing game" where the reader formulates hypotheses about "what is coming next" in the sentence, then perhaps students should be encouraged to formulate such hypotheses and confirm them in whatever way possible, including asking the teacher. Such teaching strategies, derived from the skills that children must possess in order to become efficient readers, probably will prove to be both a major source for the identification of teacher competencies as well as affording experimental means for their validation.

Concomitant with the development of the catalog of teacher competencies, the project staff will engage in the design of the instructional system. They will consider such questions as what types of materials are best suited for computer-assisted instruction presentations? Some of the materials are obviously unsuited for such presentation. Therefore, part of the task of designing such a system involves the classification of the competency sources into appropriate modes of presentation. Those resources which are best left in books can be entered into an information retrieval system: a sort of computerized bibliography which could be queried by subject, author, or title. Many of the "tailored" presentations from other disciplines can be presented through video-recorded sessions by persons in that discipline. The control portion of the system would maintain the scheduling of such presentations. The importance of the system design is revealed through its effect on the form of the material to be presented; informing the material with the demands of the medium of presentation. For example, rigid specification of student responses (and, therefore, of the questions posed to the student) are required in normal tutorial mode computer-assisted

instruction. This requirement aids in the selection of the types of material that are best suited for this type of presentation and also forces the instructional team to look closely at what it is that they want to present.

How will the initial assessment device be constructed? The student will enter the system through an initial assessment device which will attempt to approximate the types of instruction that the student needs based on his or her past experience and performance on several instruments. On the basis of the information gathered at the initial assessment point, a tentative path of movement through competency-based units will be prescribed for the student. It should be emphasized that his path is only an approximation of what the student will eventually follow, as his or her performance within the instructional units will modify this path considerably. To put it in other words, the computer will regenerate new series of instructional units based on the students' performance on previous ones. The period of design of this control system requires a close working relationship of the instructional designers and the system programmers. For this, and other reasons implied above, it is best to encourage those involved in the instructional design to become programmers themselves.

The notion of competence necessarily entials some form of evaluation or other. Several varieties of evaluation are pivotal in the functioning of the project.

The thrust of the project is to more efficiently utilize faculty talents and student time in the preparation of competent reading teachers. Obviously, the two methods of presentation, the traditional lecture format with its minimal clinical component and the computer assisted and managed presentation format with the increased clinical component along with its other variety of modes of presentation, can be compared as to the efficiency in learning the

objectives. However, such a design does not guarantee that what the students learn is, in fact, what they need to know in order to become competent teachers of reading. Therefore, a continuing assessment is planned of the "graduates" of the system to glean information as to what parts of the presentation should be emphasized and what parts should perhaps be deleted.

Student progress through the system generates evaluative information about the components of the system. Because movement from one component to the next is either based on a mastery technique or the satisfaction of some criterion, information as to difficulty, clarity, etc., will constantly be provided about a particular sub-section as long as students are moving through it. Moreover, sub-sections can be modified in a controlled fashion rendering the system a sort of continuing experiment.